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COMPUTATION OF THE CUBE ROOT OF 2.

BY ARTEMAS MARTIN, M. A., EDITOR OF THE MATH'L VISITOR, ERIE, PA.

HAVING recently computed the cube root of 2 to 52 places of decimals, by the method of approximation found in Simpson's Algebra, I submit it, with the work, for publication.

Let R = the true n th root of a number N , and r = a near approximate root, and put $q = nr^n \div (N - r^n)$; then (Simpson's Algebra, p. 169)

$$R = r + \frac{r(2q+n)}{q(2q+2n-1) + \frac{1}{6}(n-1)(2n-1)}, \text{ very nearly,}$$

which he says (p. 165) "quintuples the number of figures at every operation."

Taking $n = 3$ we have for the cube root of N ,

$$R = r + \frac{r(2q+3)}{q(2q+5) + \frac{5}{8}}, \text{ very nearly.}$$

To compute the cube root of 2, take $r = 1.25 = \frac{5}{4}$; then

$$\sqrt[3]{2} = 1.25 + \frac{\frac{5}{4}(253)}{125(255) + \frac{5}{8}} = \frac{5}{4} + \frac{759}{76504} = \frac{96389}{76504} = 1.2599210498 +,$$

which is true to the last figure.

$$\text{Now take } r = \frac{96389}{76504}, \quad \text{then } r^3 = \frac{895534711311869}{447767355672064},$$

and after some reductions we get

$$\begin{aligned} \sqrt[3]{2} &= \frac{96389}{76504} + \frac{5569174100732765358417747}{368129177985585128169959391884736464} \\ &= \frac{463813700424535044109807007546772121}{368129177985585128169959391884736464} \\ &= 1.2599210498948731647672106072782283505702514647015079 +. \end{aligned}$$

ON THE TRISECTION OF AN ANGLE.

BY PROF. J. SCHEFFER, MERCERSBURG COLLEGE, PENN'A.

I SHALL here give some of the different methods which have been devised for the solution of this celebrated problem of the Platonic school.

1. Let $AB = a$ represent an arc, whose radius is r , and let F represent the point in which AB is trisected.